IN THE CLAIMS:

1.   (Currently amended) For use in a video processing system of the type comprising a chain of video processing algorithms for processing a video stream, a system for optimizing at least one control parameter setting of at least one of said video processing algorithms in said chain of video processing algorithms, said system comprising:

an optimization unit comprising an algorithm capable of optimizing said at least one control parameter setting of said at least one video processing algorithm, without regard to prior information of said at least one video processing algorithm.

2.   (Original) The system as claimed in Claim 1 further comprising an objective quality metric unit coupled to said optimization unit, said objective quality metric unit capable of receiving an output video stream from said chain of video processing algorithms, and capable of determining a fitness value that characterizes the video quality of said output video stream, and capable of providing said fitness value to said algorithm in said optimization unit.

3.   (Original) The system as claimed in Claim 2 wherein said algorithm in said optimization unit optimizes said at least one control parameter setting of said at least one video processing algorithm using said fitness value.

4.   (Original) The system as claimed in Claim 1 wherein said optimization

unit comprises an algorithm that is capable of optimizing a plurality of control parameter

settings of each of a plurality of video processing algorithms in said chain of video

processing algorithms.

5.   (Original) The system as claimed in Claim 4 further comprising an

objective quality metric unit coupled to said optimization unit, said objective quality

metric unit capable of receiving an output video stream from said chain of video

processing algorithms, and capable of determining a fitness value that characterizes the

video quality of said output video stream, and capable of providing said fitness value to

said algorithm in said optimization unit.

6.   (Currently amended) For use in a video processing system of the type

comprising a chain of video processing algorithms for processing a video stream, a

system for optimizing at least one control parameter setting of at least one of said video

processing algorithms in said chain of video processing algorithms, said system

comprising:

a genetic algorithm unit comprising a genetic algorithm capable of optimizing

said at least one control parameter setting of said at least one video processing algorithm

without regard to prior information of said at least one video processing algorithm.

7.   (Original) The system as claimed in Claim 6 further comprising an

objective quality metric unit coupled to said genetic algorithm unit, said objective quality

metric unit capable of receiving an output video stream from said chain of video

processing algorithms, and capable of determining a fitness value that characterizes the

video quality of said output video stream, and capable of providing said fitness value to said genetic algorithm in said genetic algorithm unit.

8.   (Original) The system as claimed in Claim 7 wherein said genetic algorithm in said genetic algorithm unit optimizes said at least one control parameter setting of said at least one video processing algorithm using said fitness value.

9.   (Original) The system as claimed in Claim 6 wherein said genetic algorithm unit comprises a genetic algorithm that is capable of optimizing a plurality of control parameter settings of each of a plurality of video processing algorithms in said chain of video processing algorithms.

10.   (Original) The system as claimed in Claim 9 further comprising an objective quality metric unit coupled to said genetic algorithm unit, said objective quality metric unit capable of receiving an output video stream from said chain of video processing algorithms, and capable of determining a fitness value that characterizes the video quality of said output video stream, and capable of providing said fitness value to said genetic algorithm in said genetic algorithm unit.

11.   (Original) The system as claimed in Claim 10 wherein said genetic algorithm in said genetic algorithm unit optimizes a plurality of control parameter settings of a plurality of said video processing algorithms using said fitness value.

12.   (Original) The system as claimed in Claim 11 wherein at least one of said plurality of control parameter settings comprises the order of application of said video

processing algorithms in said chain of video processing algorithms.

13.   (Original) The system as claimed in Claim 11 wherein at least one of said

plurality of control parameter settings of said video processing algorithms comprises one

of: a bit precision parameter, a noise reduction parameter, and a peaking parameter.

14.   (Currently amended) For use in a video processing system of the type

comprising a plurality of chains of video processing algorithms for processing a plurality

of video streams, a system for optimizing a plurality of control parameter settings of a

plurality of video processing algorithms in said plurality of chains of video processing

algorithms, said system comprising:

a plurality of genetic algorithm units coupled to said plurality of parallel chains of

video processing algorithms, each of said plurality of genetic algorithm units comprising

a genetic algorithm capable of optimizing said plurality of control parameter settings of

said plurality of video processing algorithms without regard to prior information of said

at least one video processing algorithm; and

a plurality of objective quality metric units, each of said plurality of objective

quality metric units coupled to one of said plurality of genetic algorithm units, each of

said plurality of objective quality metrics capable of receiving an output video stream

from one of said plurality of chains of video processing algorithms, and capable of

determining a fitness value that characterizes the video quality of said output video

stream, and capable of providing said fitness value to a genetic algorithm in a genetic

algorithm unit to which said objective quality metric unit is coupled;

wherein said genetic algorithm in each of said plurality of genetic algorithm units

optimizes a plurality of control parameter settings of said plurality of video processing

algorithms using said fitness values.

15.   (Original)   The system as claimed in Claim 6 comprising a genetic

algorithm in which candidate solutions that will not provide an improvement in video

quality are excluded.

16.   (Original) The system as claimed in Claim 6 comprising a genetic

algorithm in which a limited number of representative candidate solutions that are likely

to provide an improvement in video quality are considered.

17.   (Original) The system as claimed in Claim 6 comprising a genetic

algorithm in which candidate solutions are considered that derive from previously

existing desirable candidate solutions that are likely to provide an improvement in video

quality.

18.   (Currently amended) For use in a video processing system of the type

comprising a chain of video processing algorithms for processing a video stream, a

method for optimizing at least one control parameter setting of at least one of said video

processing algorithms in said chain of video processing algorithms, said method

comprising the step of:

using an algorithm in an optimization unit to optimize, without regard to prior

information of said at least one video processing algorithm, said at least one control

parameter setting of said at least one of said video processing algorithms.

19.   (Original) The method as claimed in Claim 18 wherein said algorithm comprises a genetic algorithm.

20.   (Original) The method as claimed in Claim 19 further comprising the steps of:

receiving an output video stream from said chain of video processing algorithms in an objective quality metric unit;

determining in said objective quality metric unit a fitness value for said output video stream;

providing said fitness value to said genetic algorithm; and

using said fitness value in said genetic algorithm to optimize said at least one control parameter setting of said at least one of said video processing algorithms.

21.   (Original) The method as claimed in Claim 19 wherein said genetic algorithm is capable of optimizing a plurality of control parameter settings of each of a plurality of video processing algorithms in said chain of video processing algorithms.

22.   (Original) The method as claimed in Claim 21 further comprising the steps of:

receiving an output video stream from said chain of video processing algorithms in an objective quality metric unit;

determining in said objective quality metric unit a fitness value for said output video stream;

providing said fitness value to said genetic algorithm; and

using said fitness value in said genetic algorithm to optimize said plurality of control parameter settings of a plurality of said video processing algorithms.

23.   (Original) The method as claimed in Claim 22 wherein at least one of said plurality of control parameter settings comprises the order of application of said video processing algorithms in said chain of video processing algorithms.

24.   The method as claimed in Claim 22 wherein at least one of said plurality of control parameter settings of said video processing algorithms comprises one of: a bit precision parameter, a noise reduction parameter, and a peaking parameter.